

### ABSTRACT

5 The present invention provides methods for determining the genotype of a target nucleic acid. In the methods, a target nucleic acid is contacted with a probe polynucleotide and a reference nucleic acid under conditions in which they are capable of forming a four-way nucleic acid complex with a branch structure that is capable of migration. Detection of resolution of the four-way complex under the appropriate conditions indicates the genotype of the target nucleic acid.